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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,506	10/01/2003	Yuji Sakai	008312-0306165	4233

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EXAMINER	
FIGUEROA, NATALIA	
ART UNIT	**PAPER NUMBER**
2651	

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,506	SAKAI ET AL.	
	Examiner	Art Unit	
	Natalia Figueroa	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20* is/are allowed.

6)☒ Claim(s) *1-3,6,9 and 11-12* is/are rejected.

7)☒ Claim(s) *4,5,7,8,10,13-16,18 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/13/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 13 December 2004 (12/13/2004) is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 6, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (JP 2001-266301), Jiang et al (USPN 6,621,649), hereinafter Jiang and further in view of Dakroub (USPN 5,99,348).

RE claim 1, Sakai discloses a disk drive for perpendicular magnetic recording (abstract), comprising a head which reads out a data signal recorded in a disk medium (abstract and drawing 1); and a read channel which includes a decoding unit which decodes recording data from the data signal ([0020]). Sakai fails to explicitly teach a read channel which includes a signal processing unit having lower cut-off frequency characteristics and including a high-pass filter which carries out removal of including a low-frequency noise of the data signal outputted from the head. However, Jiang discloses such on (col. 9, line 44-col. 10, line 33).

Sakai and Jiang fail to explicitly teach that the read channel includes an extracting unit which extracts a component of a shift in a base line of the data signal processed by the signal

processing unit, and a compensating unit which removes the component of the shih in the base line from the data signal. However, Dakroub discloses such on (abstract, fig. 1 and col. 2, line 60-col. 3 and col. 4, lines 9-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve the apparatus as disclosed by Sakai and Jiang with the above teachings from Dakroub to make a baseline shift correction, hence providing a correct signal.

RE claim 2, the combination of Sakai, Jiang, and Dakroub is relied upon for the same reasons of rejection as stated above. Jiang further discloses that the signal processing unit includes a variable gain amplifier circuit and a low-pass filter (col. 9, line 44-col. 10, line 33).

RE claim 3, Jiang further discloses a generator which generates an ideal data signal (or a system bus sending or commanding a write operation col. 1, lines 60-65); a subtracting unit which outputs a difference data signal according difference between the ideal data signal and a data signal processed by the signal processing unit (figs 7 and 8a and col. 9, line 45-col. 10, line 44); and a filter unit including a high-frequency cut-off difference data signal, the filter which processes the filter unit generating a signal corresponding to the component of the shift in the base line (col. 9, line 45-col. 10, line 44).

RE claim 6, Jiang further discloses a parameter adjusting unit which adjusts a cut-off frequency parameter of the high-frequency cut-off filter included in the extracting unit (col. 9, line 44-col. 10, line 33).

RE claim 9, Sakai discloses disk drive using a disk medium in which a groups of data tracks for recording a data plurality of signal is formed by a perpendicular magnetic recording method (abstract and [0002]), comprising a head to read a data signal recorded in a disk medium

in read operation ([0005]), and a decoding unit to decode the recording data from the sample data ([0020]).

Sakai fails to explicitly teach that each group of data tracks is managed in each plurality of zones, comprising a read channel to process the data signal outputted from the head by a PRML signal processing method to reproduce recording data wherein the read channel includes a high-pass filter circuit having lower cut-off frequency characteristics; and a signal processing unit which generates sample data obtained from the data signal outputted from the high-pass filter circuit by a PR type of waveform equalizing processing. However, Jiang discloses such zones in (col. 1, lines 26-28 Jiang), a read channel in (col. 2, lines 50-55) and a signal processing unit in (col. 9, line 44-col. 10, line 33).

Sakai and Jiang fail to explicitly teach an extracting unit which extracts a component of shift in a base line included the data signal according to difference data between the sample data and an ideal sample data; and a compensating unit which removes the component of the shift the base line from the data signal to transmit the data signal the signal processing unit. However, Dakroub discloses such on (abstract, fig. 1 and col. 2, line 60-col. 3 and col. 4, lines 9-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve the apparatus as disclosed by Sakai and Jiang with the above teachings from Dakroub to make a baseline shift correction, hence providing a correct signal.

RE claim 11, the combination of Sakai, Jiang and Dakroub is relied upon for the same reasons of rejection as stated above. Jiang further discloses a high-frequency cut-off filter which processes the difference data signal, and which further comprises a parameter adjusting unit which adjusts a cut-off frequency parameter of the high-frequency cut-off filter according to a

zone of a read object decided in the read operation (col. 2, lines 50-55 and col. 9, line 44-col. 10, line 33).

RE claim 12, Jiang further discloses a high-frequency cut-off filter and a gain adjusting circuit which processes the difference data signal, and which further comprises a parameter adjusting unit which adjusts a cut-off frequency parameter of the high-frequency cut-off filter and a gain parameter set in the gain adjusting circuit according to a zone of a read object decided in the read operation (col. 2, lines 50-55 and col. 9, line 44-col. 10, line 33).

Allowable Subject Matter

4. Claims 4-5, 7-8, 10, 13-16, and 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claim 20 is allowed. The following is an examiner's statement of reasons for allowance:

RE claim 20, claim 20 teaches a read channel. The prior art of record, and in particular Sakai (JP 2001-266301) fails to teach or suggest a signal processing unit which generates sample data obtained from the data signal outputted from the high-pass filter circuit by a PR type of waveform equalizing processing; an extracting unit which extracts a component of a shift in a base line included in the data signal according to difference data between the sample data and an ideal sample data, the extracting unit including an integrating circuit or a gain adjusting circuit which has a high-frequency cut-off filter or high-frequency cut-off characteristics and generating a signal corresponding to the component of the shift in the base line; a compensating unit to remove the component of the shift in the base line from the data signal to transmit the data signal

to the signal processing unit; and a register to adjust a cut-off frequency parameter of the high-frequency cut-off filter and a gain parameter set in the gain adjusting circuit.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

6. Applicant's arguments with respect to claims 1-3, 6, 9, and 11-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Figueroa whose telephone number is (571) 272-7554. The examiner can normally be reached on Monday - Thursday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NFM

DAVID HUDSPETH
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